In the Claims:

Please amend Claim 16 as indicated below. The status of all pending claims is as follows:

1. (Previously Presented) A magnetoresistive sensor according to claim 15, wherein said magnetoresistive film comprises:

a free ferromagnetic layer provided on said first conductor layer;

a nonmagnetic intermediate layer provided on said free ferromagnetic layer;

a pinned ferromagnetic layer provided on said nonmagnetic intermediate layer; and

an antiferromagnetic layer provided on said pinned ferromagnetic layer.

2. (Original) A magnetoresistive sensor according to claim 1, wherein the thickness of at least one of said free ferromagnetic layer and said pinned ferromagnetic layer falls in the range of 0.5 to 2.0 times the mean free path of conduction electrons in a spin direction not spin-dependently scattered in a magnetization direction of said at least one layer.

3. (Original) A magnetoresistive sensor according to claim 2, wherein the thickness of at least one of said free ferromagnetic layer and said pinned ferromagnetic layer falls in the range of 3 nm to 12 nm.

4. (Original) A magnetoresistive sensor according to claim 1, wherein said pinned ferromagnetic layer has a laminated ferri structure.

5. (Original) A magnetoresistive sensor according to claim 1, wherein said free ferromagnetic layer has a laminated ferri structure.

6. (Original) A magnetoresistive sensor according to claim 1, wherein said nonmagnetic intermediate layer has a thickness larger than that providing a maximum resistance change rate or resistance change amount in the case of passing a current in an in-plane direction.

7. (Original) A magnetoresistive sensor according to claim 5, wherein said nonmagnetic intermediate layer is formed of Cu, and has a thickness falling in the range of 4 nm to 6 nm.

8. (Original) A magnetoresistive sensor according to claim 3, wherein said free ferromagnetic layer and said pinned ferromagnetic layer are formed of a material selected from the group consisting of Co, CoFe, CoFeB, and NiFe.

9-14. (Cancelled)

15. (Previously Presented) A magnetoresistive sensor including a multilayer current perpendicular to the plane structure having a first conductor layer, a second conductor layer, and a magnetoresistive film provided between said first and second conductor layers,

wherein said magnetoresistive film has a thickness larger than that providing a maximum resistance change rate or resistance change amount in the case of passing a current in an in-plane direction.

16. (Currently Amended) A magnetoresistive sensor according to claim 15, wherein said magnetoresistive film comprises a spin valve film having a free ferromagnetic layer and a pinned ferromagnetic ~~layer; and~~ layer.

~~at least one of said free ferromagnetic layer and said pinned ferromagnetic layer has a thickness larger than that providing a maximum resistance change rate or resistance change amount in the case of passing a current in an in-plane direction.~~

17-43. (Cancelled)